

Tuesday, July 19, 2016 2:45:41 PM

Page 1

Quality Control

DAS
14
9.20

16/10/02

DMS
 14
 5-23 *mf*
 6/10/01

DAS
20
9-89 16-10-04

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
						QC / QA Coordinator Approval			

Root Cause				FAULT CATEGORY			
Environment ☐	☐	No Re-verification ☐		Pressure/Forced ☐	☐	Temperature/Cure ☐	☐
Design ☐	☐	Operator ☐		Bending ☐	☐	Set-up ☐	☐
Doc/Data ☐	☐	Offset/Setup ☐		Centre Not Concentric ☐	☐	BOM/Route ☐	☐
Equip/Tooling ☐	☐	Supplier ☐		Cracks ☐	☐	Broken/Damage/Defect ☐	☐
Handling/Pre ☐	☐	Training ☐		Crimp/Kink/Ripple/Wave ☐	☐	Inspection Incomplete/Unqualified ☐	☐
Material ☐	☐	Use for Testing ☐		Cuffs ☐	☐	Contamination ☐	☐
Internal Transport ☐	☐	Poor Information ☐		Crushing ☐	☐	Countersink ☐	☐
Tribal Knowledge ☐	☐	Rushing ☐		Heat Treat ☐	☐	Cut Too Short ☐	☐
LOA ☐	☐	Product Improvement ☐		Wave/Twist in Tube ☐	☐	Instructions Incomplete/Unclear ☐	☐
Substation ☐	☐	Process Improvement ☐		Marks/Chatter ☐	☐	Drill Holes ☐	☐
Past Expiry Date ☐	☐	Manufacturing Process ☐		OTHER : _____			
Misidentified ☐	☐	Past Due ☐					

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Page 2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
130									
HandFXtube	Memo	0.00				<u>8</u>			
Hand Finishing Crosstubes	Per note 8 on page 1 of dwg D2893, Prep inner concave surface of support and apply 3M Scotch-Weld as per dwg. 24h of cure time.	134469							6-10-16
140	QC3- Inspect Part Finish	0.00							
140									
QC	Memo	0.01				<u>8</u>			DAS 38
Quality Control								OCT 07 2016	8-89
170	Identify as per dwg & Stock Location: _____	0.00							
170									
Packaging	Memo	0.01				<u>8</u>			DAS 6
Packaging	LOCATION : LG050							OCT 12 2016	9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 149088

Tuesday, July 19, 2016 2:45:41 PM

149088

Page 3

Item ID: D2893-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Support

Start Date: 7/14/2016 Start Qty: 8.00

g

Cust Item ID:

Required Date: 7/28/2016 Req'd Qty: 8.00

g

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC21- Final Inspection - Work Order Release

0.00

180

QC

Memo

0.13

Quality Control

DAS
21
9-89

OCT 1 2 2016

VS 16/10/12

DAS
21
9-89

OCT 1 2 2016

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
DQA TS JAG				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

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Page 1

Work Order ID: 149088

149088

Parent Item: D2893-1

D2893-1

Parent Item Name: Support

Start Date: 7/14/2016

Required Date: 7/28/2016

Start Qty: 8.00

Required Qty: 8.00

Comments:

IPP: C02.11.26Reformat; Added P/OKJ

IPP D 06.04.19 removed alodine EC

IPP Rev:E Added priming as per Rev B 07-04-30 JLM

IPP F 08.03.19 Re-format EC verified by: DD

IPP Rev:G 08-05-15 add QC14 DD verified by:EC

IPP Rev:H

11.08.04 as per dwg rev.C DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
DSK078		Manufactured	No			100	Each	12.0000	0.5	4			

DSK078

D2893-1 Turning Detail

Location

Loc Qty

Loc Code

MAT060

12

145868

4

148186

8

149293

4

only
16/10/03

~~not remove in the~~
~~computer.~~
not remove in the
computer

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

DART AEROSPACE LTD		Work Order: 149088
Description: Ø2.750 Support		Part Number: D2893-1
Inspection Dwg: D2893	Rev: C	Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	5
HAAS Section								
AA	2.985	3.005		2.990	2.288	2.295	2.295	2.295
AB	0.440	0.460		.440	.440	.440	.440	.440
AC	0.125	0.160		.145	.145	.145	.145	.145
AD	0.040	0.060		.050	.050	.050	.050	.050
AE	0.188	0.193		.189	.189	.189	.189	.189
AF	0.125	0.160		.140	.140	.140	.140	.140
AG	0.140	0.160		.145	.150	.148	.153	.150
AH	1.360	1.400		1.372	1.373	1.368	1.372	1.371
AI	0.040	0.060		.051	.052	.054	.051	.053
AJ	1.190	1.230		1.217	1.217	1.212	1.213	1.214
AK	0.010	0.020		.012	.012	.015	.015	.015
AL	0.053	0.073		.063	.063	.063	.063	.063
AM	0.240	0.260		.250	.250	.250	.250	.250
AN	2.518	2.538		2.528	2.528	2.528	2.528	2.528
AO	84.39	90.39		87.39	87.39	87.39	87.39	87.39
AP	0.261	0.266		.262	.262	.262	.262	.262
AQ	0.053	0.073		.063	.063	.063	.063	.063
AR								
AS								
AT								
Accept/Reject								

Measured by:	DAS 14 9-89	Date:	16/10/01
Audited by:	DAE 20 9-89	Date:	16-10-04
Preliminary Approval:		Date:	

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
B	07.05.08	Dimension AP revised	KJ/JLM	
C	08.04.21	Reformat	KJ/JLM	
D	12.07.31	Dwg Rev updated	KJ	

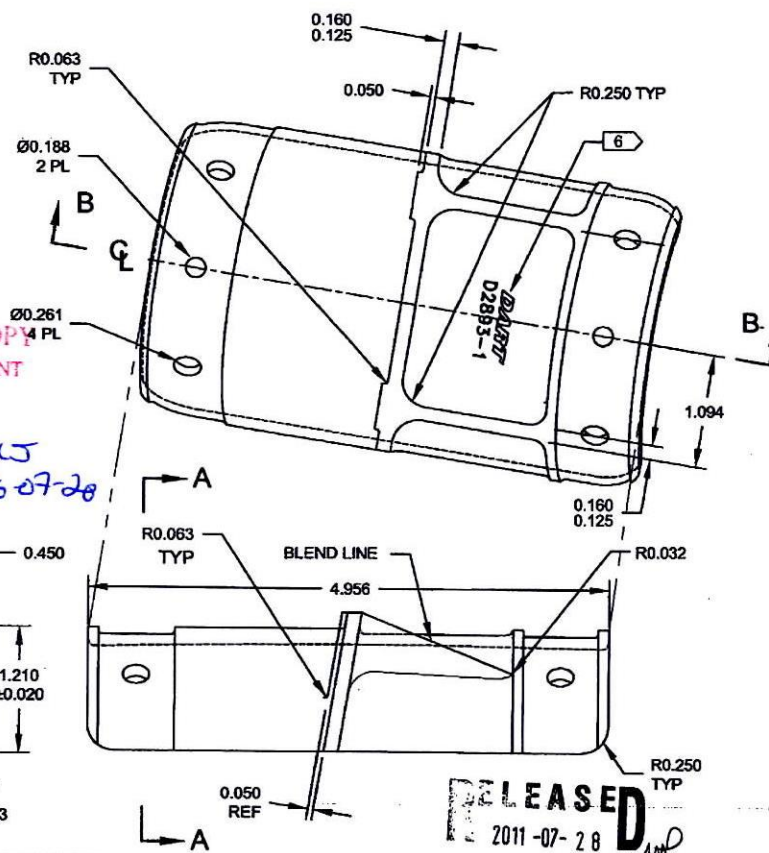
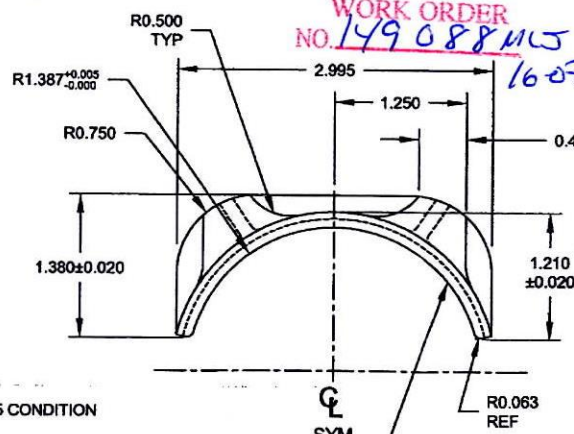
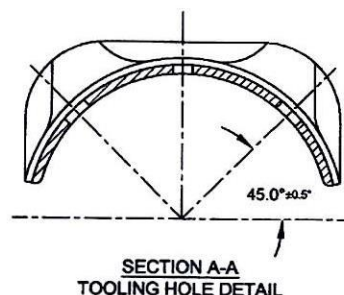
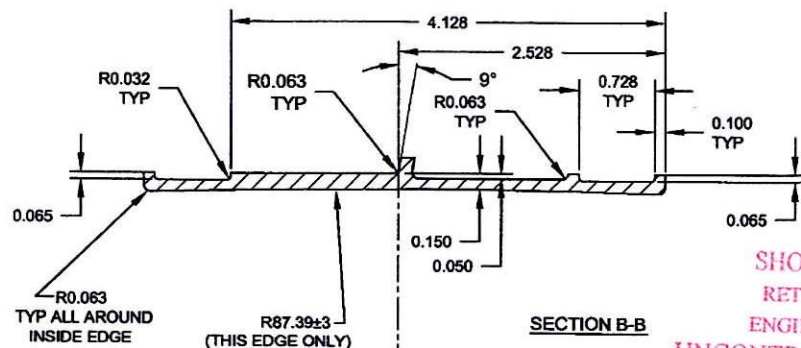
DART AEROSPACE LTD		Work Order: 149088
Description: Ø2.750 Support		Part Number: D2893-1
Inspection Dwg: D2893	Rev: C	Page 1 of 1

FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	16	27	38	4	5
HAAS Section								
AA	2.985	3.005		2.293	2.998	3.000		
AB	0.440	0.460		.440	.440	.440		
AC	0.125	0.160		.145	.145	.145		
AD	0.040	0.060		.050	.050	.050		
AE	0.188	0.193		.189	.189	.189		
AF	0.125	0.160		.140	.140	.140		
AG	0.140	0.160		.152	.150	.150		
AH	1.360	1.400		1.370	1.375	1.373		
AI	0.040	0.060		.050	.051	.052		
AJ	1.190	1.230		1.211	1.214	1.214		
AK	0.010	0.020		.015	.015	.015		
AL	0.053	0.073		.063	.063	.063		
AM	0.240	0.260		.250	.250	.250		
AN	2.518	2.538		2.528	2.528	2.528		
AO	84.39	90.39		87.39	87.39	87.39		
AP	0.261	0.266		.262	.262	.262		
AQ	0.053	0.073		.063	.063	.063		
AR								
AS								
AT								
DAS Accept/Reject								

Measured by: 14 9-89 <i>mk</i>	Date: 16/10/02
Audited by: DAS 20 9-89	Date: 16-10-04
Preliminary Approval:	Date:

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
B	07.05.08	Dimension AP revised	KJ/JLM	
C	08.04.21	Reformat	KJ/JLM	
D	12.07.31	Dwg Rev updated	KJ	<i>[Signature]</i>



NOTES:

- 1) MATERIAL: 17-4 PH STAINLESS STEEL, H900 OR H925 CONDITION
MIN UTS = 170 KSI (38 HRC)
(REF DART SPEC. D6104)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 (REF XXXX = ±0.010) UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: DART LOGO (PER DART SUPPLIED GRAPHIC) AND PART NUMBER IN THIS AREA WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP, PER DART QSI 044 6.3.
- 7) WEIGHT: 0.78 lb
- 8) FOR THE ENTIRE INNER CONCAVE SURFACE:
ABRADE SURFACE WITH 400-GRIT SANDPAPER. REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY 0.03\"/>

D2893-1 SUPPORT

RELEASED
2011-07-28

C	RMV FINISH, ADD 3M 2216, ADD H925 MATL OPTION	CP	11.07.15
B	UPDATE DIMS AS MFG, PRIME INSIDE	PH	07.03.16
A	NEW ISSUE	CP	01.01.10
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>P</i>		
DRAWN	<i>P</i>		
CHECKED	<i>ASS</i>		
MFG. APPR.	<i>ASS</i>		
APPROVED	<i>ASS</i>		
DE APPR.	<i>ASS</i>		
DATE	11.07.15		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D2893
TITLE Ø2.750 SUPPORT
REV. C
SHEET 1 OF 1
SCALE NTS

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